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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/481,851	01/14/2000	Rustin W. Allred	TI-29746	6201

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EXAMINER

YEH, EDITH M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/481,851

Applicant(s)

ALLRED, RUSTIN W.

Examiner

Edith M Yeh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-7 and 13-22 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 8 is/are rejected.
- 7) ☒ Claim(s) 3, 4 and 9-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the equalizer and its comprised elements/components of claims 1, 5, and 8 must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaku et al. (US 5694422) in view of Lane et al. (US 5687104).

Kaku et al. discloses a equalizer comprising: a plurality of equalizing filters (Fig.5, column 3 lines 3-10); a data processor (30 Fig.5); a data storage unit for storing filter parameters (31 Fig.5, column 2 lines 20-25, Abstract); and computing means for carrying out filtering computations on the basis of parameters read from the parameter storage, however does not

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implicitly specify the contents of the parameters and the computation methods. Lane et al. teaches a data input device in communication with the data processor (251-254 FIG.9); a translation function algorithmic software and a softening function algorithmic software (FIG.2 & 7, column 3 lines 43-50, column 4 lines 12-14) implemented. The center frequency, bandwidth and gain data received (104 FIG.2, column 5 lines 19-30) and stored in the buffer (FIG.9); the timing parameters (e.g. N in column 4 lines 19-22 '104; column 1 line 61-column 2 line 6 '422) and gain incrementing parameters (e.g. E in column 4 lines 22-37). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the equalizer data processing system taught by Lane et al. implemented in Kaku et al.'s computing means to reduce noise components, compensate for acoustical shortcomings, etc. (column 1 lines 47-58) so the filters can be recharacterized substantially without audible artifacts.

4. **Claims 2 & 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaku et al. (US 5694422) in view of Lane et al. (US 5687104), further in view of admitted prior art (Description of the Prior Art).

Description of the Prior Art (page 1 line 23-page 2 line 9, Figure 1 & 2) further discloses an allpass filter having a multiplier dependent upon a predetermined bandwidth and predetermined peak gain for a cut region below 0 dB (equation 3) and further dependent solely upon a predetermined bandwidth for a boost region above 0 dB (equations 1 & 2). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the allpass filter in the equalizing filter taught by the admitted prior art in the Kaku et al.'s equalizing filters to provide an improved circuit for an equalizer whose frequency ranges can be adjusted in accordance with the predetermined parameters (page 2 lines 22-25).

Allowable Subject Matter

5. **Claims 5-7, 13-22** are allowed.
6. **Claims 3-4, 9-12** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Claim 5 is allowable over prior art of record because the prior art of record does not teach or suggest a system as a whole, a digital equalizer comprising a translation algorithmic software configured to generate a reciprocal estimate for the desired peak as cited in the claim 5.

Claim 13 is allowable over prior art of record because the prior art of record does not teach or suggest a method of digital equalizer control as a whole, comprising the steps of generating a reciprocal estimate for the user-selected gain using the relationship cited in the claim, and translating the user-selected gain and user-selected bandwidth in a multiplier parameter for the allpass filter cited in the claim.

Claim 17 is allowable over prior art of record because the prior art of record does not teach or suggest a method of digital equalizer control as a whole, comprising the step of generating a first allpass filter multiplier parameter in the region as cited in the claim for the user-selected gain setting.

Conclusion

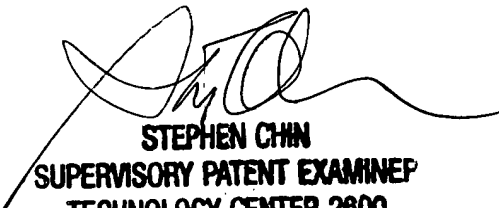
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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Yeh whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Edith Yeh
April 30, 2003



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800